

# **Environmental Technology and Service Opportunities in the Baja California Peninsula**

*January 2003*



**Cal/EPA International Affairs Unit**

*Prepared By:*



**SDSU**

**Institute for Regional Studies  
of the Californias**  
San Diego State University

**California Environmental Protection Agency**

**Winston H. Hickox, Secretary**

***Nancy H. Sutley***

*Deputy Secretary for Policy and Intergovernmental Relations*

***Ricardo Martínez García***

*Assistant Secretary for International Affairs*

**California Environmental Protection Agency - International Affairs Unit  
1001 I Street, Sacramento California 95814 (916) 445-3846**

**Environmental Technology and Service Opportunities  
in the  
Baja California Peninsula**

This project is the result of collaboration by many individuals and organizations.

**Project Team**

Milena Bertram  
Denise Moreno Ducheny  
Paul Ganster  
Bertha Hernández  
Elena Lelea  
Jasmin Manipud  
Kenn Morris  
Christiane Müller-Rostin  
Joel Pilco  
Angélica Villegas

**Collaborating Organizations**

California-Mexico Trade Assistance Centers  
California Technology, Trade, and Commerce Agency  
Canacintra Tecate  
Canacintra Tijuana  
Comisión Estatal de Servicios Públicos de Tecate  
Industrial Environmental Association  
Southwest Center for Environmental Research and Policy  
Southwestern College's Small Business Development and International Trade  
Center

**Support**

This project was realized with the support of  
the Cal/EPA International Affairs Unit.



*Printed on Recycled Paper*



Winston H. Hickox  
Agency Secretary,  
Cal/EPA

State of California  
California Environmental Protection Agency

Gray Davis  
Governor



Air Resources Board | Department of Pesticide Regulation | Department of Toxic Substances Control

Integrated Waste Management Board | Office of Environmental Health Hazard Assessment | State Water Resources Control Board | Regional Water Quality Control Board

Dear Reader:

Over the past decade, Mexico has realized unprecedented economic expansion. Because of its proximity to the United States, Mexico's northern border region has seen a proportionately larger share of economic growth than the rest of the country. Unfortunately, the recent development has also resulted in environmental degradation of soil, water, and air. Similar economic expansion and environmental degradation has occurred in the southwestern United States.

Because of the commitments of both governments, numerous national and international environmental protection programs and initiatives have been implemented in the region. In the State of California, Governor Gray Davis has made the improvement of our relationship with Mexico a keystone of his administration. Before being inaugurated into office, Governor-elect Davis traveled to Mexico City to meet with Mexican President Ernesto Zedillo. After the election of a new Mexican President, Governor Davis has had meetings with President Vicente Fox on a regular basis both in California and in Mexico.

Both leaders have recognized that the protection of the environment is a key component of maintaining and strengthening our close economic relationship. The California Environmental Protection Agency (Cal/EPA) established the Border Environmental Program within the Office of the Secretary on July 1, 2000. In March 2001, the administrations of President Fox and Governor Davis participated in the enactment of agreements to protect the environment in the Border Region. President Fox has responded to the environmental challenges in the Border Region by strengthening enforcement of Mexican Environmental Laws and by appointing a special envoy to the Baja California – California region to oversee the expansion and implementation of environmental programs.

The Mexican States of Baja California and Baja California Sur have and will continue to experience major industrial and economic growth. Several cities in the region, such as Tijuana, are expected to double the size of their populations within the next 18 years. The governments of the United States, Mexico, California, Baja California and Baja California Sur are committed to maintaining the infrastructure necessary to protect their environments during this period of growth. Several National and International Monetary funds are pursuing environmental infrastructure improvement funding opportunities in the region. Additionally, the funding of improvements by the private industry is being multiplied by the Mexican government's acceptability of privatizing some local or municipal services, such as water treatment and solid waste collection, that have, in the past, been the exclusive purview of Mexican Government Agencies.

California has much to gain from a strong and respectful relationship with Mexico. California leads the nation, if not the world, in various industries ranging from agriculture to biotechnology to environmental technologies and there is a proven need for our products and services in Mexico. The California Environmental Protection Agency remains committed to working with environmental technology and service industries to open doors for the vast opportunities waiting in the Baja California Peninsula.

Ricardo Martinez García  
Assistant Secretary for International Affairs  
California Environmental Protection Agency



printed with soy ink on  
100% post consumer paper

1001 I Street | Sacramento, CA 95814

phone: 916.445.3846 | fax: 916.445.6401

[www.calepa.ca.gov](http://www.calepa.ca.gov)

## Introduction

In the wake of increasing population growth, urbanization, and economic activity, environmental conditions in the U.S.-Mexican border region have continued deteriorating at a rate that outpaces the ability of the region's policymakers to adequately respond to demands for infrastructure and services.

As a consequence, the region possesses enormous market potential for suppliers of environmental technology and services. Yet, despite the attention paid to the U.S.-Mexican border environment during negotiations for the North American Free Trade Agreement, the focus on Mexico as a market for environmental technology and services has shifted to Asia. The "Environmental Technology and Service Opportunities in the Baja California Peninsula" project seeks to renew interest in the Mexican market, particularly in the states of Baja California and Baja California Sur, where environmental quality impacts conditions in California and provide business opportunities for California companies through research and outreach.

This report is the culmination of the aforementioned research and outreach project, which involved several components, including a survey of California companies, interviews with representatives from Mexican agencies, and research using printed and original sources. The project team studied market potential, identified private and public financing options, sought project leads, and presented findings in a draft report that was released at a forum on April 26, 2002. The forum brought together a diverse group with representatives from California companies, Mexican government agencies at the city, state, and federal levels, Mexican companies, and other interested individuals. Participants were given an opportunity to provide their input with regard to networking, financing, and export promotion policies that would improve environmental conditions in the Baja California peninsula while also providing environmental and economic benefits to Californians. In addition to the forum, a trade show was held for California companies to display information about their products and services and a field trip was organized for participants to become more familiar with the Californian-Baja Californian border region including the cities Tijuana, Tecate, and Mexicali.

It is hoped that this document supports increased trade and sustainability in the region.



Paul Ganster, Ph.D.  
Director, IRSC  
Chair, Border Trade Alliance  
Environment Committee



Denise Moreno Ducheny  
SDSU Presidential Fellow  
Member of Cal/BECC  
California State Senator

## **Executive Summary**

The contents of this report are derived from secondary sources, interviews with government officials in Mexico and the United States, surveys of industry representatives and environmental technology and service (ETS) company employees, and other international trade experts.

Chapter I defines the ETS sector as products and services that involve pollution control, waste management, site remediation, environmental monitoring, and recycling. The ETS market in Mexico is expected to continue to grow at an annual rate of 7 percent during the 2002–2006 period. U.S. vendors dominate as suppliers to the Mexican market. Mexico is decentralizing its environmental authority and developing new legislation and regulations at the municipal and state level. Although Mexico's economy has been affected by the recession in the United States, the peso's purchasing power remains strong.

Chapter II identifies water pollution control and treatment issues in the arid Baja California and Baja California Sur region. As SEMARNAT implements its National Hydraulic Program for 2001–2006, opportunities for supplying equipment and services will increase for infrastructure development, prevention and treatment of water pollution, and water conservation. Mexican authorities are seeking to increase coverage of households with potable water services and access to sewerage facilities in Tijuana, Mexicali, Tecate, and other parts of the peninsula.

Chapter III discusses air quality management issues related to point and nonpoint source pollution in the Baja California peninsula. Pilot programs for reducing vehicle-related air pollution are in initial stages in Tijuana. Opportunities will increase as Mexico expands its monitoring capabilities and enforcement capacity.

Chapter IV explores energy efficiency and renewable energy opportunities in the Baja California peninsula. Liberalization of regulations for Mexico's electric

power industry has begun, leading to increased private investment in power generation facilities. Other plans are under way to increase natural gas transmission to and within Baja California. Renewable energy sources are only a small part of Mexico's energy portfolio, but opportunities for increasing energy efficiency are gaining greater attention.

Chapter V describes trends in industrial environmental management, including Mexican programs to increase energy conservation and efficiency. Environmental management systems and ISO 14001 certification are still in the early stages of acceptance by companies in Mexico and the need for accredited environmental auditors is growing as enforcement increases and more emphasis is placed on voluntarily reducing environmental impacts.

Chapter VI identifies problems related to solid waste management. The market for municipal and industrial solid waste management equipment and services is one of the least developed environmental market segments in Mexico. NADBank, Banobras, and municipal organizations are working together to increase the availability of infrastructure.

Chapter VII highlights issues dealing with hazardous waste management in the peninsula, where a shortage of disposal and confinement facilities exists. The market for remediation of contaminated soil is also incipient.

Chapter VIII describes agriculture in the peninsula as an economic sector and as a factor in environmental management. Specific programs of interest to California companies include agricultural water conservation and agricultural drainage waste management.

Chapter IX provides an overview of finance opportunities for organizations purchasing and/or selling ETS products in Mexico.

The final chapter (Chapter X) presents the results and recommendations of the research conducted for this report. The information in this chapter is based on the previous nine chapters, feedback from readers of the draft report, and presentations at the forum at the Hotel Camino Real in Tijuana on April 26, 2002.